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| 10/722,405 | 11/28/2003 | Takashi Suzuki | 000409-073 | 7172 |
| 21839 | 7590 | 10/20/2006 | EXAMINER | |
| BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404 | | | SCHINDLER, DAVID M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2862 | |

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/722,405

Applicant(s)

SUZUKI ET AL.

Examiner

David Schindler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-19, 21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-19, 21 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the communication filed 8/7/2006.

Response to Arguments

2. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

With regard to the last paragraph of page 1 of the Remarks, the Examiner respectfully disagrees. The Examiner notes that claim 17 recites, a first magnet disposed at one end of the main body portion (line 6), and a second magnet disposed at an opposite end of the main body portion (line 8). To this, the Examiner notes that the term "at" is being used to mean "near" (note definition 1 at the top of page 2). Note the first definition for the term "at" as defined in the provided printout from www.dictionary.com. Therefore, the Examiner disagrees with Applicant as the first and second magnets of Weh are "near" the first yoke. Furthermore, the Examiner is interpreting the main body top portion of the first yoke of Weh, which is the portion of the first yoke that is above the middle projecting portion of the first yoke but does not include the top projecting portion, to be a first end. Similarly, the Examiner is interpreting the bottom portion of the first yoke of Weh, which is the portion of the first yoke that is below the middle projecting portion of the first yoke, to be a second end which is opposite to the first end of the first yoke. Given the above, the Examiner therefore notes that the first magnet of Weh does appear to be disposed at one end of the main body portion, and the second magnet of Weh does appear to be disposed at an opposite end of the main body portion. With regard to the phrase "Thus, Weh does

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not disclose a yoke having a projecting portion and the first and second magnets all on the same yoke" as argued by Applicant on lines 6-7 of page 1 of the Remarks, the Examiner notes that the claims do not appear to recite the feature "the first and second magnets all on the same yoke."

With regard to the first full paragraph of page 2 of the Remarks, the Examiner respectfully disagrees. Note the first full paragraph of page 6 of the provided English translation of the Web reference.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Birnbaum (4,236,093).

As to Claim 17,

Birnbaum discloses a first yoke (113) including a main body portion and a projected portion extending from the main body portion in a direction at right angles to the main body portion, the projecting portion possessing a tip end (Figure 2), a first magnet (112) disposed at one end of the main body portion, the first magnet possessing a north end and a south end (Figure 2), a second magnet (111) disposed at an opposite end of the main body portion, the second magnet possessing a north end and a south end (Figure 2), a second yoke (114) positioned so that a space exists between the second yoke and the tip end of the projecting portion (Figure 2), a magnetic detecting element (128) disposed in the space between the second yoke and the tip end of the

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projecting portion (Figure 2), first magnetic flux from the first magnet travels from the north end of the first magnet towards the second yoke, then flows back to the south end of the first magnet via the magnetic detecting element and the projecting portion (Figure 2), second magnetic flux from the second magnet travels from the north end of the second magnet towards the second yoke via the projecting portion and the magnetic detecting element, then flows back to the south end of the second magnet, lines of magnetic flux from the first magnet flow in an opposite direction to the lines of magnetic flux from the second magnet at the magnetic detecting element (Figure 2), the magnetic fluxes from the first and the second magnets passing through the magnetic detecting element are cancelled with each other when the magnetic body is positioned at a place near or adjacent to the position detecting sensor at which the first magnetic flux passes through the magnetic body (Figure 2), and the magnetic flux passing through the magnetic detecting element becomes substantially greater than a predetermined threshold value when the magnetic body is positioned away from the position detecting sensor (Figure 2), wherein the first and the second magnets at both ends of the main body portion differ from each other in at least one dimension (Figure 2) ((Figure 2) and (Column 4, Lines 17-68) and (Column 5, Lines 1-11)).

(Note that the as the magnetic field generated by one magnet cancels at least in part the magnetic field of the other magnet. Furthermore, the Examiner is interpreting the predetermined threshold value to be the point at which the magnetic field direction flips from right to left when the wheel is nearby, to left to right when the wheel moves away).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Varterasian (3,060,370) in view of Birnbaum (4,236,093).

Varterasian discloses a first yoke including a main body portion (12) and a projecting portion (13) extending from the main body in a direction at right angles to the main body portion, the projecting portion possessing a tip end (Figure 1), a first magnet (10) disposed at one end of the main body portion (Figure 1), the first magnet possessing a north end and a south end (Figure 1), a second magnet (11) disposed at an opposite end of the main body portion (Figure 1), the second magnet possessing a north end and a south end (Figure 1), a second yoke (14) positioned so that a space

exists between the second yoke and the tip end of the projecting portion (Figure 1), a magnetic detecting element (15) disposed in the space between the second yoke and the tip end of the projecting portion (Figure 1), first magnetic flux from the first magnet travels from the north end of the first magnet towards the second yoke ((Figure 1) and (Column 2, Lines 1-22)), then flows back to the south end of the first magnet via the magnetic detecting element and the projecting portion ((Figure 1) and (Column 2, Lines 1-22)), second magnetic flux from the second magnet travels from the north end of the second magnet towards the second yoke via the projecting portion and the magnetic detecting element ((Figure 1) and (Column 2, Lines 1-22)), then flows back to the south end of the second magnet ((Figure 1) and (Column 2, Lines 1-22)), lines of magnetic flux from the first magnet flow in an opposite direction to lines of magnetic flux from the second magnet at the magnetic detecting element ((Figure 1) and (Column 2, Lines 1-22)), the magnetic fluxes from the first and second magnets passing through the magnetic detecting element are cancelled with each other when the magnetic body is positioned at a place near or adjacent to the position detecting sensor at which the first magnetic flux passes through the magnetic body ((Figure 1) and (Column 2, Lines 1-22) and (Column 2, Lines 60-72)), the magnetic flux passing through the magnetic detecting element becomes substantially greater than a predetermined threshold value when the magnetic body is positioned away from the position detecting sensor ((Figure 1) and (Column 2, Lines 1-22) and (Column 2, Lines 60-72) and (Column 3, Lines 1-2)).

Varterasian does not disclose the first and second magnets at both ends of the main body portion differ from each other in at least one dimension.

Birnbaum discloses the first (111) and second magnets (112) at both ends of the main body portion (114) differ from each other in at least one dimension (Figure 2).

It would have been obvious to a person of ordinary skill in the art to modify Varterasian to include the first and second magnets at both ends of the main body portion differ from each other in at least one dimension as taught by Birnbaum in order to control and adjust the direction and magnitude of the flux passing between the pole faces of the main body portion (114) and the second yoke (113) (Column 4, Lines 38-53).

Note that as armature (16) of Varterasian is moved away (displaced) the voltage will be non-zero.

As to Claim 21,

Varterasian does not disclose the at least one dimension is a thickness of the first and second magnets in an extending direction of the main body of the first yoke.

Birnbaum discloses the first and second magnets at both ends of the main body portion differ from each other in at least one dimension (Figure 2).

It would have been obvious to a person of ordinary skill in the art to modify Varterasian to include the at least one dimension is a thickness of the first and second magnets in an extending direction of the main body of the first yoke as taught by Birnbaum in order to control and adjust the direction and magnitude of the flux passing between the pole faces of the main body portion (114) and the second yoke (113) (Column 4, Lines 38-53).

As to Claim 22,

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Varterasian does not disclose the at least one dimension is a length perpendicular to an extending direction of the main body of the first yoke.

Birnbaum discloses the at least one dimension is a length perpendicular to an extending direction of the main body of the first yoke (Figure 2).

It would have been obvious to a person of ordinary skill in the art to modify Varterasian to include the at least one dimension is a length perpendicular to an extending direction of the main body of the first yoke as taught by Birnbaum in order to control and adjust the direction and magnitude of the flux passing between the pole faces of the main body portion (114) and the second yoke (113) (Column 4, Lines 38-53).

7. Claims 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weh et al. (herein referred to as "Weh") (DE 3237843 A1) in view of Birnbaum (4,236,093).

As to Claim 17,

Weh discloses a first yoke (1) including a main body portion and a projecting portion (middle projecting portion of (1)) extending from the main body in a direction at right angles to the main body (Figure 1), the projecting portion possessing a tip end (Figure 1), a first magnet (5) disposed at one end of the main body (Figure 1 / bottom end), the first magnet possessing a north end and a south end (Figure 1), a second magnet (4) disposed at an opposite end of the main body (Figure 1 / top end), the second magnet possessing a north end and a south end (Figure 1), a second yoke (3)

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positioned so that a space exists between the second yoke and the tip end of the projecting portion (Figure 1), a magnetic detecting element (13) disposed in the space between the second yoke and the tip end of the projecting portion (Figure 1), first magnetic flux from the first magnet travels from the north end of the first magnet towards the second yoke, then flows back to the south end of the first magnet via the magnetic detecting element and the projecting portion (Figure 1 / note flux lines), second magnetic flux from the second magnet travels from the north end of the second magnet towards the second yoke via the projecting portion and the magnetic detecting element, then flows back to the south end of the second magnet (Figure 1 / note flux lines), lines of magnetic flux from the first magnet flow in an opposite direction to the lines of magnetic flux from the second magnet at the magnetic detecting element (Figure 1 / note flux line double arrows that are located to the left of (13)), the magnetic fluxes from the first and second magnets passing through the magnetic detecting element are cancelled with each other when the magnetic body is positioned at a place near or adjacent to the position detecting sensor at which the first magnetic flux passes through the magnetic body (Figure 1), the magnetic flux passing through the magnetic detecting element becomes substantially greater than a predetermined threshold value when the magnetic body is positioned away from the position detecting sensor ((Figure 1) and (see note 1 below)).

Weh does not disclose the first and second magnets at both ends of the main body portion differ from each other in at least one dimension.

Birnbaum discloses the first (111) and second magnets (112) at both ends of the main body portion (114) differ from each other in at least one dimension (Figure 2).

It would have been obvious to a person of ordinary skill in the art to modify Weh to include the first and second magnets at both ends of the main body portion differ from each other in at least one dimension as taught by Birnbaum in order to control and adjust the direction and magnitude of the passing between the pole faces of the main body portion ((114) of Birnbaum) and the second yoke ((113) of Birnbaum) (Column 4, Lines 17-37).

Note 1 of Weh: Note that the Examiner is interpreting the predetermined threshold value to be zero detected flux.

As to Claim 19,

Weh discloses the third yoke (2) is separated from the second yoke by a predetermined distance (Figure 19).

8. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Birnbaum (4,236,093) in view of Weh et al. (herein referred to as "Weh") (DE 3237843 A1).

As to Claim 18,

Birnbaum does not disclose a third yoke positioned parallel with the projecting portion, wherein the third yoke is formed integrally with the second yoke to form a substantially L-shaped configuration.

Weh discloses a third yoke (top projecting part of (1)) positioned parallel with the

projecting portion (middle projecting part of (1)), wherein the third yoke is formed integrally with the second yoke to form a substantially L-shaped configuration (Figure 1).

It would have been obvious to a person of ordinary skill in the art to modify Birnbaum to include a third yoke positioned parallel with the projecting portion, wherein the third yoke is formed integrally with the second yoke to form a substantially L-shaped configuration as taught by Weh in order to advantageously provide additional flux guidance.

As to Claim 19,

Birnbaum does not disclose a third yoke positioned parallel with the projecting portion, wherein the third yoke is separated from the second yoke by a predetermined distance.

Weh discloses a third yoke positioned parallel with the projecting portion, wherein the third yoke is separated from the second yoke by a predetermined distance (Figure 1).

It would have been obvious to a person of ordinary skill in the art to modify Birnbaum to include a third yoke positioned parallel with the projecting portion, wherein the third yoke is separated from the second yoke by a predetermined distance as taught by Weh in order to advantageously provide additional flux guidance.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Schindler whose telephone number is (571) 272-2112. The examiner can normally be reached on M-F (8:00 - 5:00).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



David Schindler
Examiner
Art Unit 2862

DS



EDWARD LEFKOWITZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800